Nutrient TMDL Development for Rice Lake, North Dakota

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1.0 INTRODUCTION AND DESCRIPTION OF THE WATERSHED

Rice Lake is located in Ward County, North Dakota, 16 miles south and 11 miles west of Minot, North Dakota (Figure 1). It is a natural freshwater lake found in the Coteau region of North Dakota. This region is located between the Missouri River uplands and the glaciated plains of eastern North Dakota. The region is unique because there are almost no streams or stream valleys. Melting glaciers of the Wisconsinan age left behind an irregular landscape of hills and flat lands with natural lakes and wetlands in the depressions (NDGS, 2000). These lakes are not connected by typical stream networks, but are connected by groundwater flow through deep glacial sediments. Table 1 summarizes some of the geographical, hydrological, and physical characteristics of Rice Lake.

Table 1. General characteristics of Rice Lake and the Rice Lake watershed.

Legal Name	Rice Lake
Major Drainage Basin	Missouri River - Lake Sakakawea
Nearest Municipality	Minot, ND
8-Digit HUC	10110101
County	Ward County, ND
Latitude	48° 00' 30"
Longitude	-101° 00' 30"
Surface Area	216.4 acres
Watershed Area	619.6 acres
Average Depth	7.7 feet
Maximum Depth	30.0 Feet
Volume	1,431 acre-feet
Tributaries	Small, unnamed tributary in the southwest portion of the lake
Outlets	None
Type of Waterbody	Natural
Fishery Type	Northern pike, perch, walleye, bullhead
Classified Beneficial Uses	Recreation, agriculture, aquatic life, cool water fishery, and municipal water supply

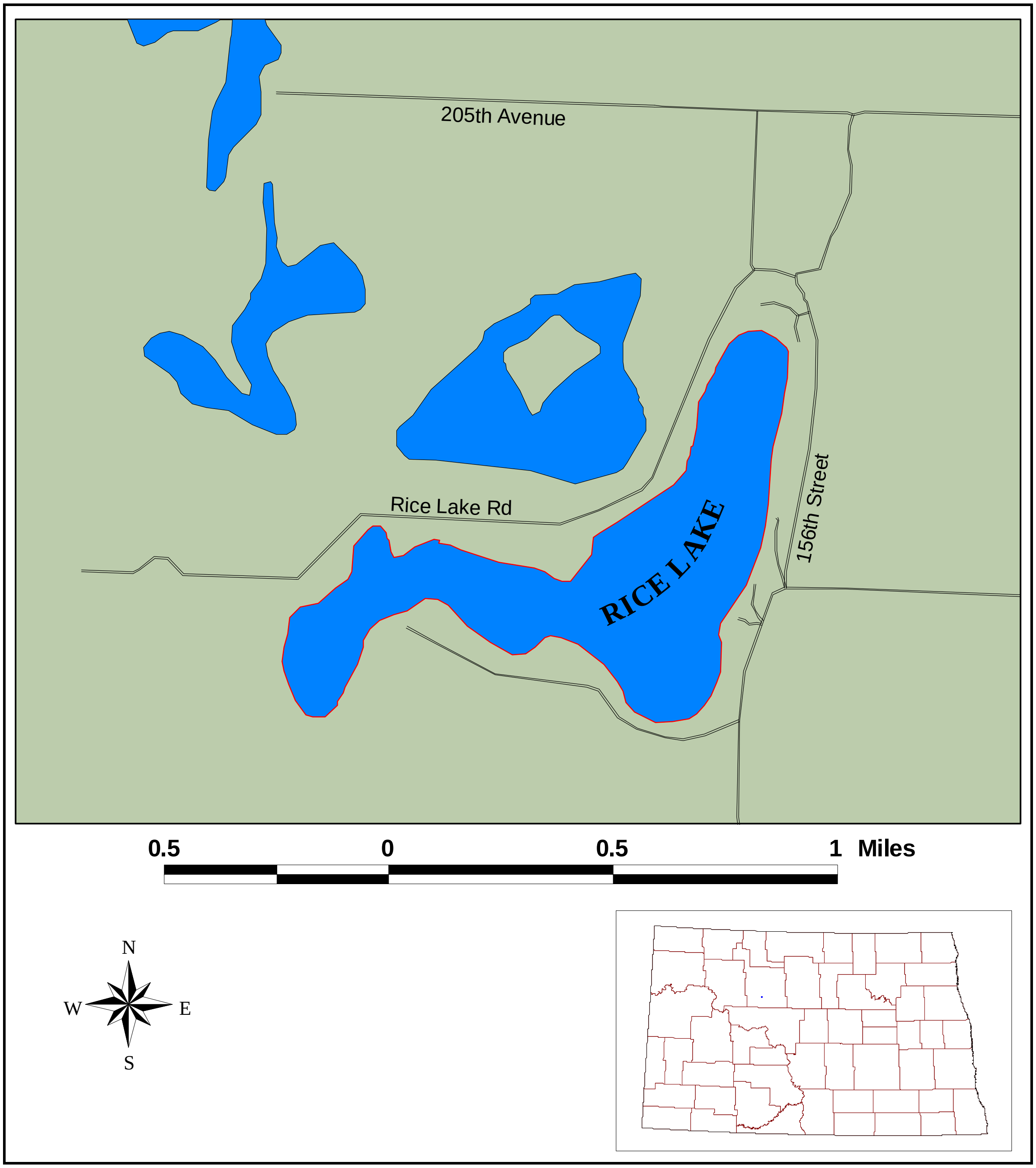

Figure 1. General location of Rice Lake.

1.1 Clean Water Act Section 303(d) Listing Information

As part of the Clean Water Act Section 303(d) listing process, the North Dakota Department of Health (NDDH) has identified Rice Lake as an impaired waterbody (Table 2). The aquatic life and recreational uses of Rice Lake are impaired. Aquatic life is impaired because of nutrients, sediment, and low dissolved oxygen, while recreation on Rice Lake is impaired because of nutrients (NDDH, 1998a). The North Dakota Section 303(d) list did not include any potential sources of these impairments. Rice Lake has been classified as a Class 2 cool water fisheries lake. A class 2 lake is defined as being capable of supporting growth and propagation of nonsalmonid fishes and marginal growth of salmonid fishes and associated aquatic biota (NDDH, 2001). However, the Rice Lake Diagnostic/Feasibility study indicated that the lake was eutrophic and had nuisance algal blooms, poor fisheries production, and oxygen depletion resulting in periodic fish kills (RLRSD, 2000).

Table 2. Rice Lake Section 303(d) listing information (NDDH, 1998a).

Reach Identifier	ND_L37
Waterbody Name	Rice Lake
Class	2 - Cool water fishery
Impaired Uses	Aquatic life (partially supporting); recreation (partially supporting)
Causes	Nutrients, sediment/turbidity, low dissolved oxygen
Priority	Low

1.2 Topography

Rice Lake is located in an area of North Dakota dominated by natural water bodies formed from glacial outwash during the late Wisconsin age. The topography consists of gently rolling hills and depressions with natural lakes found in the depressions. These lakes are often fed and drained by groundwater. There are almost no surface drainage features found in this region (e.g., streams, valleys, alluvial sediments). Elevations in the watershed range from 2035 feet near the lake perimeter to 2100 feet near the western edge of the watershed (Figure 2).

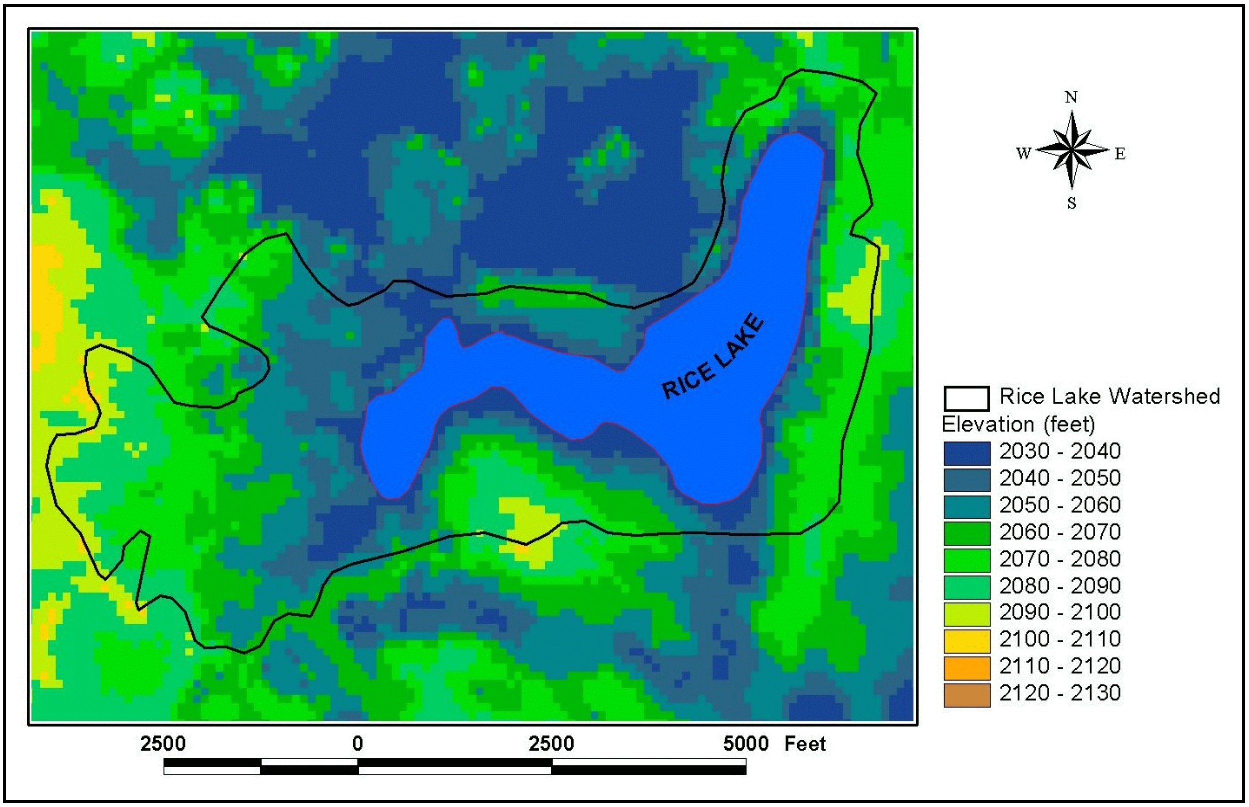

Figure 2. Topography in the Rice Lake watershed.

1.3 Land Use/Land Cover

The Rice Lake Diagnostic/Feasibility study reported that most of the Rice Lake watershed is agricultural land (82 percent) (RLRSD, 2000). The remainder of the land is used as low density residential land. In contrast, satellite land use data (MRLC) indicated that 64 percent of the watershed consisted of grasslands, 0.3 percent pasture land, and 29 percent small grains and row crops (Table 3). It is suspected that much of the land classified as grasslands by the satellite imagery is actually used for agriculture. Figure 3 shows the distribution of land uses in the Rice Lake watershed.

Table 3. MRLC land use in the Rice Lake watershed.

Land Use	Percent of Watershed
Grasslands	64.34
Small Grains	23.38
Row Crops	5.30
Wetlands	4.47
Fallow	1.58
Bare Rock/Sand/Clay	0.35
Pasture/Hay	0.32
Total	99.74

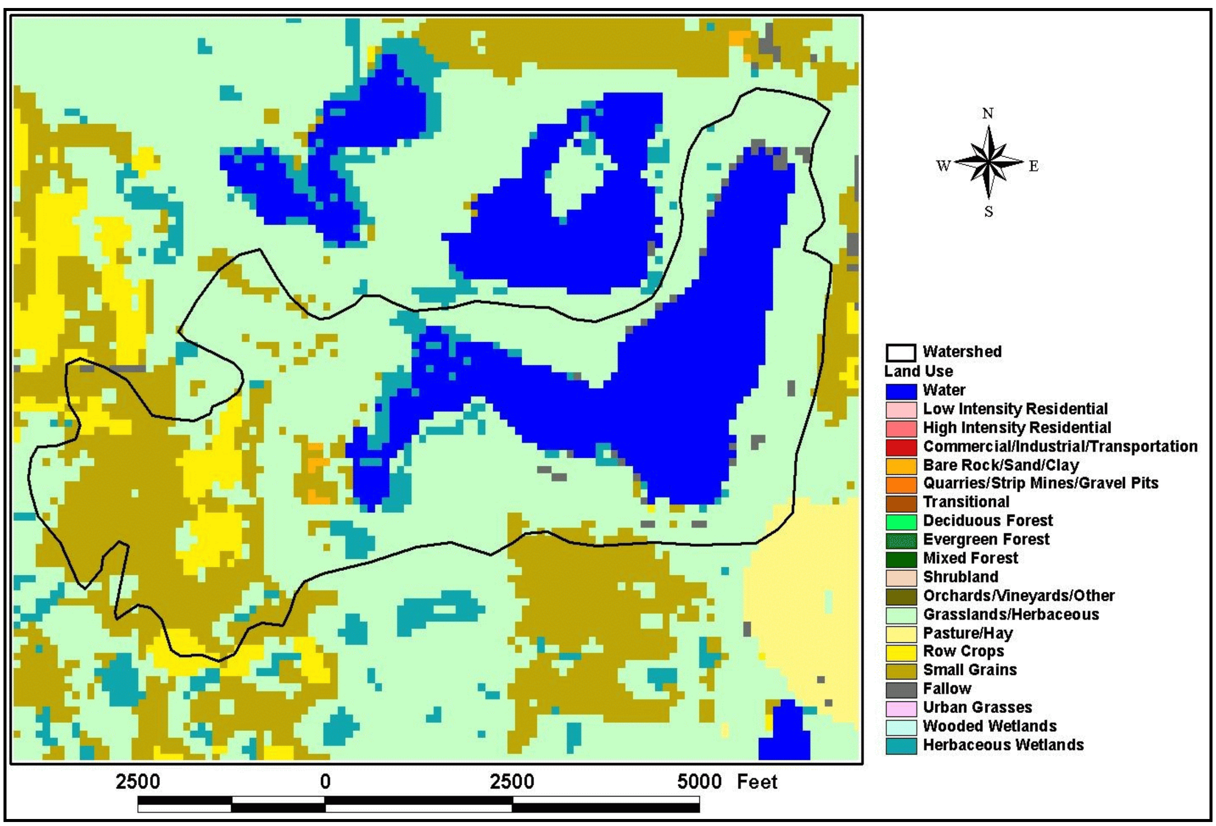

Figure 3. MRLC land use in the Rice Lake watershed.

1.4 Climate and Precipitation

Central North Dakota has a typical continental climate characterized by large annual, daily, and day-to-day temperature changes, light to moderate precipitation, low relative humidity, and nearly continuous air movement. Precipitation events tend to be brief and intense and occur primarily in the summer months. Average annual precipitation at the Minot Airport rain gage between 1942 and 1997 was 17.9 inches per year (Figure 4) (NCDC, 2001). June is the wettest month with average precipitation of 3.39 inches. Most of the precipitation occurs during the summer months (May through August), with very little precipitation from November through March. Annual mean temperature data for Minot were not available at the time of this report.

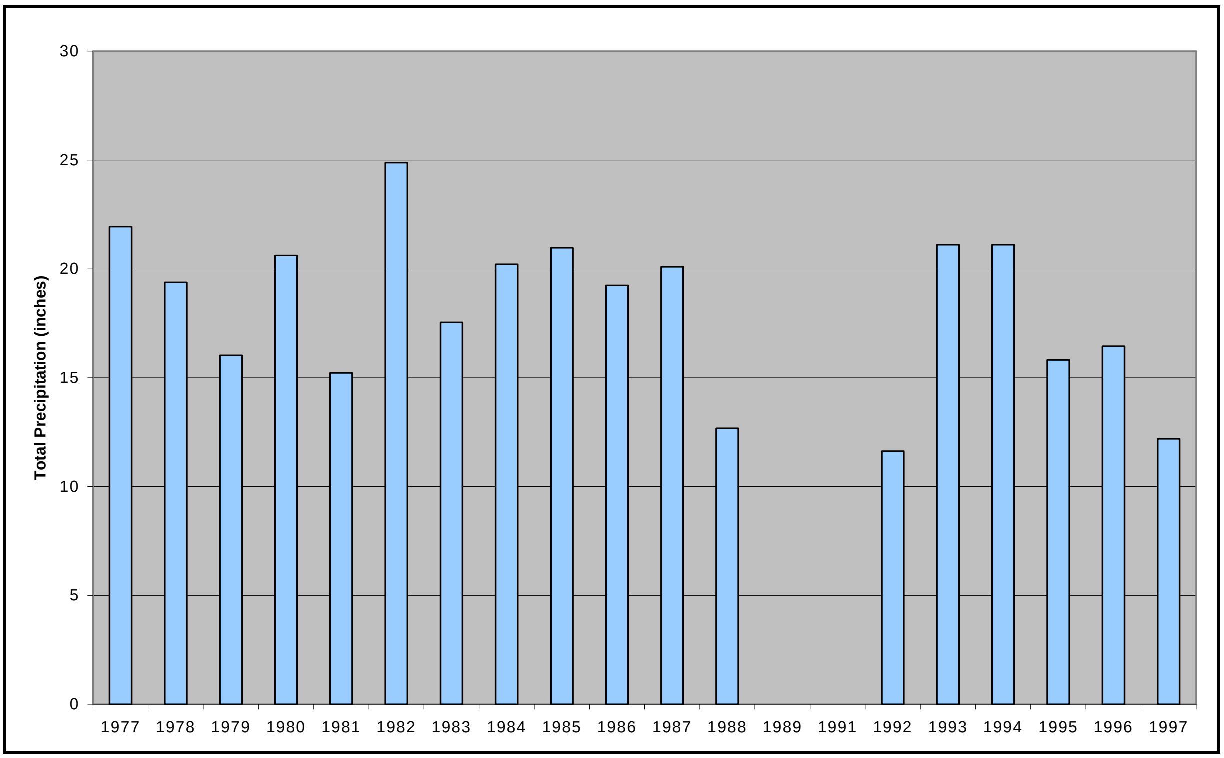

Figure 4. Total precipitation per year at the Minot Airport, North Dakota rain gage, 1977-1997. Incomplete data were available for 1989-1991.

1.5 Available Water Quality Data

Data were collected in and around Rice Lake by Houston Engineering, Inc. between April 1999 and January 2000 as part of the Rice Lake Diagnostic/Feasibility study (RLRSD, 2000). Surface water samples were obtained from two locations in Rice Lake, one in the deepest part of the lake and one in the west bay (Figure 6). A small tributary feeding into the west end of Rice Lake was also sampled as part of this program. No other significant streams are located in the Rice Lake watershed.

Most of the water entering and leaving Rice Lake is transported through groundwater (74 percent) (RLRSD, 2000). Because of this, seven ground water piezometers were installed in the area surrounding the lake to determine hydrologic gradients and collect groundwater samples (Figure 5). Water quality samples were also obtained from several private and public wells in the Rice Lake watershed. Most lake samples were collected twice per month between May and October 1999. Monthly sampling was conducted during other months. Sampling parameters are shown below in Table 4. Other data, such as meteorological data, aquatic vegetation samples, and septic system surveys were performed to assist in the Rice Lake Diagnostic/Feasibility study.

Table 4. Rice Lake sampling parameters.

Stage	Total Volatile Suspended Solids
Temperature	Turbidity
Dissolved Oxygen	pH
Total Phosphorus	Total alkalinity
Dissolved Phosphorus	Chloride
Total Kjeldahl Nitrogen	Specific Conductance
Ammonia Nitrogen	Chlorophyll-*a*
Nitrite plus Nitrate Nitrogen	Fecal Coliform Bacteria
Total Suspended Solids	Phytoplankton Enumeration and Biovolume
Total Dissolved Solids	Zooplankton Enumeration and Biovolume

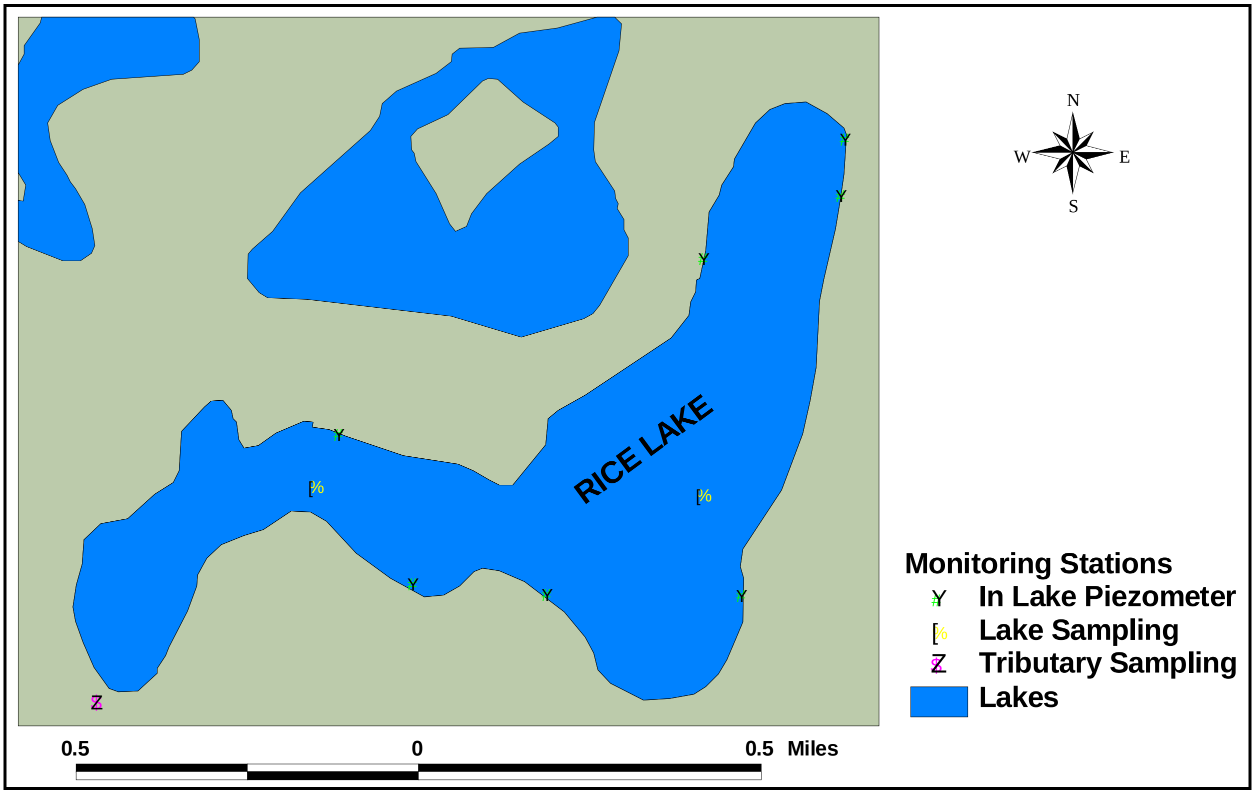

Figure 5. Location of Rice Lake monitoring stations.

Surface water quality parameters were monitored in Rice Lake at three stations between April 1999 and January 2000. Average concentrations at the lake surface are summarized in Table 5. Average total phosphorus and dissolved phosphorus concentrations at the main lake monitoring station were similar at the surface and bottom of the lake. However, the average concentrations in the middle of the lake were significantly higher. The total Kjeldahl nitrogen concentration at the southwest inlet was also significantly higher than in-lake values. Rice Lake has a total nitrogen to total phosphorus ratio of 24:1. Ratios above 7.2 typically indicate that phosphorus is the limiting nutrient (Chapra, 1997).

Table 5. Average values at three Rice Lake surface monitoring stations, April 1999 to January 2000.

Parameter	Lake Surface	Bay Surface	Inlet Surface
Total Phosphorus (mg/L)	0.048	0.032	0.060
Dissolved Phosphorus (mg/L)	0.014	0.010	0.011
Total Kjeldahl Nitrogen (mg/L)	1.398	1.291	2.337
Nitrate/Nitrite (mg/L)	0.018	0.010	0.010
Ammonia (mg/L)	0.018	0.008	0.015
Chlorophyll-*a* (µg/L)[1]	6.071	4.438	—
Secchi Disk Depth (meters)	1.391	1.381	—

[1]Chlorophyll-*a* units in the Rice Lake Diagnostic/Feasibility study were mistakenly reported as mg/L.

The RLRSD compared Rice Lake data to other lakes in North Dakota having available water quality data. Rice Lake had better water quality than several of the sampled lakes. In general, lakes in this region had high TKN concentrations, low ammonia and nitrate/nitrite concentrations, and high total phosphorus concentrations (Table 6) (RLRSD, 2000). Nine out of the eleven lakes that were compared to Rice Lake are on North Dakota's 1998 Section 303(d) list. Rice Lake average concentrations were generally below the average and median concentrations in the 11 other lakes.

Table 6. Regional lake water quality compared to Rice Lake water quality[1] (RLRSD, 2000).

	Total Phosphorus	Nitrate/ Nitrite	TKN	Ammonia	Chlorophyll-*a*[2]	Secchi Disk Depth
Units	mg/L	mg/L	mg/L	mg/L	µg/L	feet
Rice Lake	0.058	0.018	1.36	0.049	6.1	4.5
Other North Dakota Lakes						
Max	0.707	0.123	5.06	0.677	237.5	7.5
Min	0.031	0.006	1.09	0.025	3.5	0.5
Average	0.147	0.044	2.87	0.234	56.4	3.7
Median	0.056	0.029	2.57	0.191	11.0	3.3

[1]11 regional lakes were sampled for this study. 9 are on the North Dakota Section 303(d) list. Rice Lake values are depth averaged except for nitrate/nitrite and chlorophyll-*a*.
[2]Chlorophyll-*a* units in the Rice Lake Diagnostic/Feasibility study were reported as mg/L. It is assumed that those units were an error.

2.0 WATER QUALITY STANDARDS

The Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for all waters on a state's Section 303(d) list. A TMDL is defined as “the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background” such that the capacity of the waterbody to assimilate pollutant loadings is not exceeded. The purpose of a TMDL is to identify the pollutant load reductions or other actions that should be taken so that impaired waters will be able to attain water quality standards. TMDLs are required to be developed with seasonal variations and must include a margin of safety that addresses the uncertainty in the analysis. Separate TMDLs are required to address each cause of impairment (i.e., nutrients, sediment). USEPA Region 8 contracted with Tetra Tech, Inc. to develop a TMDL for nutrient impairment in Rice Lake. The sediment impairment in the lake will not be directly addressed by this report. Monitoring will be continued to determine the impairment status of the lake.

2.1 Narrative Water Quality Standards

The North Dakota Department of Health has set narrative water quality standards which apply to all surface waters in the state. The narrative standards pertaining to nutrient impairments are listed below (NDDH, 2001).

- All waters of the state shall be free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to humans, animals, plants, or resident aquatic biota.

- No discharge of pollutants, which alone or in combination with other substances, shall:
  (1) Cause a public health hazard or injury to environmental resources;
  (2) Impair existing or reasonable beneficial uses of the receiving waters; or
  (3) Directly or indirectly cause concentrations of pollutants to exceed applicable standards of the receiving waters.

In addition to the narrative standards, the NDDH has set a biological goal for all surface waters in the state. The goal states that "the biological condition of surface waters shall be similar to that of sites or waterbodies determined by the department to be regional reference sites," (NDDH, 2001).

2.2 Numeric Water Quality Standards

Rice Lake has been classified as a Class 2 cool water fishery. Class 2 lakes are "waters capable of supporting growth and propagation of nonsalmonid fishes and marginal growth of salmonid fishes and associated aquatic biota," (NDDH, 2001). All classified lakes in North Dakota are assigned aquatic life, recreation, irrigation, livestock watering, and wildlife beneficial uses. The North Dakota State Code states that lakes shall use the same numeric criteria as Class 1 streams. However, different nitrogen and phosphorus guidelines have been established for lakes (Table 7).

Table 7. North Dakota guidelines and criteria for all classified lakes.

Parameter	Criteria/Guidelines	Limit
NO_3 as N	0.25 mg/L	Maximum allowable limit
PO_4 as P	0.02 mg/L	Maximum allowable limit

The average nitrate/nitrite concentration in Rice Lake (0.018 mg/L) was significantly lower than the North Dakota lake nitrate guidelines of 0.25 mg/L. Most of the nitrogen in Rice Lake was organic in nature (total Kjeldahl nitrogen). High TKN concentrations generally indicate pollution resulting from septic systems, human wastes, and animal wastes.

Phosphorus concentrations cannot be compared to the North Dakota phosphorus guidelines at this time. The guidelines are for total PO_4 (usually termed soluble reactive phosphorus), which was not measured in the Rice Lake Diagnostic/Feasibility study. The ratio of dissolved phosphorus to total phosphorus was relatively high (29.2 percent of phosphorus was in the dissolved form). This indicates that phosphorus loadings may be from failing septic systems.

3.0 TMDL TARGETS

A TMDL target is the value that is measured to judge the success of the TMDL effort. TMDL targets must be based on state water quality standards, but can also include site-specific values when no numeric criteria are specified in the standard. Based on public informational meetings, lake users want to use Rice

Lake for swimming while maintaining a viable fishery. The lake must also be aesthetically pleasing. The following sections summarize the water quality targets for Rice Lake based on these beneficial uses.

3.1 Trophic State Index

North Dakota's 1998 Clean Water Act Section 305(b) report indicates that Carlson's Trophic State Index (TSI) is the primary indicator used to assess beneficial uses in the state's lakes and reservoirs (NDDH, 1998b). Trophic status is the measure of productivity of a lake or reservoir and is directly related to the level of nutrients (phosphorus and nitrogen) entering the lake or reservoir from its watershed. Lakes tend to become eutrophic (more productive) with higher nitrogen and phosphorus inputs. Eutrophic lakes often have nuisance algal blooms, limited clarity, and low dissolved oxygen concentrations that can result in impaired aquatic life and recreational uses. Carlson's TSI attempts to measure the trophic state of a lake using nitrogen, phosphorus, chlorophyll-a, and Secchi disk depth measurements (Carlson, 1977). The various TSI values were calculated for Rice Lake using the data obtained from the Rice Lake Diagnostic/Feasibility study. Table 8 shows that Rice Lake was classified as an eutrophic lake.

Table 8. Carlson’s trophic state indexes for Rice Lake.

Parameter	Relationship	Units	TSI Value[1]
Chlorophyll-*a*	TSI (Chl-a) = 30.6 + 9.81[ln(Chl-a)]	µg/L	48.3
Total Phosphorus (TP)	TSI (TP) = 4.15 + 14.42[ln(TP)]	µg/L	62.7
Secchi Depth (SD)	TSI (SD) = 60 - 14.41[ln(SD)]	meters	55.2
Total Nitrogen (TN)	TSI (TN) = 54.45 + 14.43[ln(TN)]	µg/L	—

[1]TSI values were calculated using average surface values from the main Rice Lake monitoring station.
TSI < 40 = Oligotrophic (least productive)
TSI > 60 = Hypereutrophic (most productive)

A Carlson’s TSI target of 58 for total phosphorus was chosen for the Rice Lake TMDL. Carlson’s TSI directly addresses total phosphorus impairments in the lake. The TSI target was chosen based on the knowledge that (1) phosphorus is likely the limiting nutrient in Rice Lake; and (2) best professional judgment of background conditions North Dakota Coteau region lakes. A total phosphorus TSI target of 58 corresponds to a total phosphorus target concentration of 0.042 mg/L.

4.0 SIGNIFICANT SOURCES

There are no point sources in the Rice Lake watershed. Most of the land in the watershed is farmed or in some type of permanent herbaceous cover. Around Rice Lake, there are approximately 169 residences (seasonal and full time residences), a park, and a campground facility. The Rice Lake Diagnostic/Feasibility report concluded that all of the residences around Rice Lake are serviced by some type of septic system and an estimated 33 percent of those systems were failing. It is believed that up to 70 percent of the nutrient loadings into Rice Lake were originating from these systems through direct runoff or groundwater flow. This was supported by high TKN and dissolved phosphorus concentrations in the lake.

Other sources of nutrients may originate from the agricultural land in the watershed (especially in the western portion of the watershed) and runoff from lawns and roads around the lake. Because Rice Lake is primarily fed by groundwater, it is possible that water from outside of the Rice Lake watershed is contributing to the nutrient impairment.

Rice Lake is essentially a ground water, flow-through lake system. Ground water supplies 74 percent of the water entering the lake (1186 acre-feet) (Table 9). The remaining water sources are precipitation and runoff, which primarily control the water surface elevation in Rice Lake. There are no outlets on Rice Lake and the lake has a hydraulic residence time of 1.5 years.

Table 9. Rice Lake hydraulic budget for April 1999 to January 2000 (RLRSD, 2000)

Variable	Volume (acre-feet)
Watershed Surface Runoff	207.9
Precipitation to Lake Surface	201.1
Evaporation	(567.3)
Groundwater Inflow	1185.6
Groundwater Outflow	(947.1)
Change in Storage	(80.1)

Nutrient loads were calculated from the data collected during the Rice Lake Diagnostic/ Feasibility study. This study suggested that 202.7 kg of total phosphorus entered Rice Lake between April 1999 and January 2000 and that 70 percent was retained in the lake (Table 10) (RLRSD, 2000). Groundwater is the largest source of phosphorus, followed by surface water runoff. It was estimated that 49 percent of the phosphorus in the groundwater comes from failing septic systems, and phosphorus concentrations were greatest in the wells and monitoring sites along the north shore of Rice Lake. The total phosphorus residence time in the lake is 1.7 years. An estimated 2,752.0 kg of total nitrogen entered Rice Lake and 42.4 percent was retained in the lake during the study period. Like phosphorus, the majority of nitrogen loads came from groundwater. Nitrogen residence time was 1.1 years.

Table 10. Total loads (kg) into Rice Lake during 1999.

Load Sources	Total Phosphorus	Dissolved Phosphorus	Total Nitrogen	Nitrate/ Nitrite
Surface Runoff	17.2	3.4	673.4	2.9
Precipitation to Lake Surface	13.9	13.9	365.9	246.7
Groundwater Inflow	171.6	171.6	1712.7	1050.8
Groundwater Outflow	(60.7)	NA	(1584.1)	(16.4)
Amount Retained in Lake	141.9	NA	1167.8	1284.0

5.0 TECHNICAL ANALYSIS

Establishing a relationship between in-stream water quality targets and source loading is a critical component of TMDL development. Identifying the cause-and-effect relationship between pollutant loads and the water quality response is necessary to evaluate the loading capacity of the receiving waterbodies. The loading capacity is the amount of pollutant that can be assimilated by the waterbody while still attaining and maintaining water quality standards. This section discusses the estimation of the loading capacity and existing loadings in Rice Lake.

The BATHTUB model (Walker, 1996) was used to predict the effects of nutrient load reductions in Rice Lake. BATHTUB performs steady-state water and nutrient balance calculations in a spatially segmented hydraulic network, which accounts for advective and diffusive transport, and nutrient sedimentation. Eutrophication related water quality conditions are predicted using empirical relationships previously developed and tested for reservoir applications. Simulations were run for various phosphorus reduction scenarios (Table 11). The BATHTUB model predicted that a 30 percent reduction in total phosphorus loads would achieve the target of 0.042 mg/L.

Table 11. Observed and predicted values for selected response variables in Rice Lake.

Variable	Observed Value[1]	*Predicted Value*[2]			
		10%	20%	30%	40%
Average Total Phosphorus (mg/L)	0.058	0.049	0.046	0.042	0.038

[1]Observed values are an average lake value between April 1999 and January 2000.

6.0 MARGIN OF SAFETY AND SEASONALITY

6.1 Margin of Safety

Section 303(d) of the Clean Water Act and EPA's regulations require that "TMDLs shall be established at levels necessary to attain and maintain the applicable narrative and numerical water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality." The margin of safety (MOS) can either be incorporated into conservative assumptions used to develop the TMDL (implicit) or added as a separate component of the TMDL (explicit).

Assuming an annual total phosphorus load of 202.7 kilograms, eliminating failing septic systems through a centralized sewer system alone should reduce total phosphorus loading through groundwater by 65.6 kilograms or annual total phosphorus loading by 32 percent. Further reductions in total phosphorus loads will be achieved through ordinances prohibiting the use of phosphorus containing lawn fertilizers and through the implementation of best management practices affecting agricultural land in the watershed. These additional practices will provide an additional margin of safety through an estimated additional 5 kilograms reduction in annual total phosphorus load.

Post-implementation monitoring related to the effectiveness of the TMDL controls can also be used to assure attainment of the targets, using adaptive management during the implementation phase.

6.2 Seasonality

Section 303(d)(1)(C) of the Clean Water Act and the U.S. Environmental Protection Agency (EPA's) regulations require that a TMDL be established with seasonal variations. The Rice Lake TMDLs address seasonality because the BATHTUB model incorporates season differences in its prediction of annual average total phosphorus concentrations.

7.0 TMDL

Table 12 summarizes the nutrient TMDL for Rice Lake in terms of loading capacity, wasteload allocations, load allocations, and a margin of safety. The TMDL can be generically described by the following equation:

TMDL = LC = WLA + LA + MOS

where

LC	loading capacity, or the greatest loading a waterbody can receive without violating water quality standards;
WLA	wasteload allocation, or the portion of the TMDL allocated to existing or future point sources;
LA	load allocation, or the portion of the TMDL allocated to existing or future nonpoint sources;
MOS	margin of safety, or an accounting of uncertainty about the relationship between pollutant loads and receiving water quality. The margin of safety can be provided implicitly through analytical assumptions or explicitly by reserving a portion of loading capacity.

Table 12. Summary of the nutrient TMDL for Rice Lake.

Category	Total Phosphorus (kg/yr)	Explanation
Existing Load	202.7	From observed data
Loading Capacity	141.9	30 percent reduction based on BATHTUB modeling
Wasteload Allocation	0	No point sources
Load Allocation	132.1	Entire loading capacity minus MOS is allocated to nonpoint sources
MOS	9.8	Eliminating the septic systems and the other anticipated activities will result in reducing phosphorus loads below the loading capacity

8.0 ALLOCATION

These TMDLs will be implemented by several parties on a volunteer basis. Loads from the failing septic systems will be eliminated through the creation of a centralized sewer system. Further reductions in total phosphorus loads will be achieved through ordinances prohibiting the use of phosphorus containing lawn fertilizers and through the implementation of best management practices affecting agricultural land in the watershed.

9.0 PUBLIC PARTICIPATION

The following public notice was sent to the Minot Daily Newspaper and ran on February 27, 2003.

PUBLIC NOTICE STATEMENT

Notice of submittal to the U.S. Environmental Protection Agency (EPA) and a request for public comment on the State of North Dakota's Rice Lake Nutrient and Sediment Total Maximum Daily Load (TMDL).

1. Summary

Section 303(d) of the Clean Water Act (CWA) and its accompanying regulations (CFR Part 130 Section 7) requires each state to identify waterbodies (i.e., lakes, reservoirs, rivers, streams, and wetlands) which are considered water quality limited and requiring load allocations, waste load allocations, or total maximum daily loads. A waterbody is considered water quality limited when it is known that its water quality does not meet applicable water quality standards or is not expected to meet applicable water quality standards. Waterbodies can be water quality limited due to point sources of pollution, non-point sources of pollution, or both.

Section 303(d) of the Clean Water Act requires states to write Total Maximum Daily Loads on waterbodies that are water quality limited and listed on the states 303(d) list. This list has become known as the "TMDL list" or "Section 303(d) list."

Following an opportunity for public comment, the state must submit TMDLs to the EPA Regional Administrator. The EPA Regional Administrator then has 30 days to either approve or disapprove the TMDL. The purpose of this notice is to solicit public comment prior to formally submitting the TMDL to the EPA Regional Administrator.

2. Public Comments

Persons wishing to comment on the Rice Lake Nutrient and Sediment Total Maximum Daily Load may do so, in writing, within thirty (30) days of the date of this public notice. Comments must be received within this 30-day period to ensure consideration in the EPA approval or disapproval decision. All comments should include the name, address, and telephone number of the person submitting comments, and a statement of the relevant facts upon which they are based. All comments should be submitted to the attention of the Section 303(d) TMDL Coordinator, North Dakota Department of Health, Division of Water Quality, 1200 Missouri Avenue, Bismarck, ND 58506-5520. The Rice Lake Nutrient and Sediment TMDL may be reviewed at the above address as well as North Dakota Department of Health, Division of Water Quality, 314 S. Main St., PO Box 390, Towner, ND 58788 during normal business hours or by accessing it through the Department's web address (http://www.health.state.nd.us). Copies may be requested by writing to the Department at the above addresses or by calling 701.328.5210.

Public Notice Number ND-2003-

Copies of the draft TMDL, with an introduction letter and notice of the newspaper announcement were sent to the following stakeholders:

- North Dakota Game & Fish
- Ward County Soil Conservation District
- Ward County Water Resource Board
- Natural Resources Conservation Service
- Upper Dakota RC&D
- Rice Lake Recreational Service District

The 30-day public comment period closed on March 30th , 2003 with the North Dakota Department of Health receiving no public comments on the draft TMDL and no requests for public meetings.

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